AMENDMENTS TO THE CLAIMS

1 though 6 (Cancelled)

7. (Currently Amended) A method for calculating optimal flexible savings account contributions for a particular user, comprising the steps of:

formulating a dynamic programming model based on a consumer's objective function comprising a utility function, said dynamic programming model incorporating health plan parameters; exogenous parameters, preference parameters, and a health transition equation;

assigning values to the exogenous parameters by

assembling recent health care use and cost data for a reference population,

acquiring personal and health information on the user and on his/her household members,

estimating the distribution of out-of-pocket costs the user and his/her household is likely to face in the coming year in various health plans, based on the experience of comparable households in the reference population calibrating the health transition equation with historical claims data linked to the user's health information, and

estimating a marginal tax rate based on the user's personal information; estimating the user's risk aversion;

using numerical calculation methods to estimate other said preference parameter values by:

solving the dynamic programming model with assigned values for the exogenous parameters, with the estimated risk aversion for said particular user,[~~,~~]] and with a plurality of different test values for other preference parameters, and

selecting as the estimated preference parameter values those test parameter values which correspond to solutions of the dynamic programming model

which are close to observed historical expenditures of like-situated

members of a given health plan;

solving the dynamic programming model by numerical calculation methods for optimal flexible spending account contributions for a particular user in one or more particular health plans (or no health insurance), with the assigned exogenous parameters, the estimated risk aversion and with the estimated values for the preference parameters; and

outputting the optimal contributions, the optimal contributions reducing loss of unspent money at the end of a year.

8. (Previously presented) A computer-based method for calculating optimal flexible savings account (FSA) contributions comprising the steps of: processing data and performing numerical solutions with a central processing unit; storing data and computer programs on a mass storage device; storing data and commands in volatile memory;

calculating optimal FSA contributions based upon ~~formulating~~ a consumer's objective function which maximizes expected future utility (EU), namely

$$\max_{G,\{m_\varepsilon, c_\varepsilon\}_{\varepsilon=-\infty}^{\infty}} EU = \int_{-\infty}^{\infty} U(h,c) f(\varepsilon,\theta)\, d\varepsilon$$

where,

G represents the FSA contribution;

$\{m_\varepsilon, c_\varepsilon\}_{\varepsilon=-\infty}^{\infty}$ represents the consumption plan for every possible health shock ε;

$U(h,c)$ represents the utility of the consumer from health status h and consumption of non-medical goods c;

f(ε, θ) is the probability density function of the distribution for health shocks, where θ parameterizes the distribution of health shocks and will depend on the characteristics of the consumer.

9. (original) The method of claim 8 further comprising the step of:

using

$$U(hc) = \begin{cases} \left((1-\delta)h^{\rho} + (\delta)c^{\rho}\right)^{1/\rho} & \text{if } h \geq h_{\min} \\ 0 & \text{if } h < h_{\min} \end{cases}$$

as the instantaneous utility function,

where, ρ < 1, $\delta \in [0,1]$ and $h_{\min}$ are the parameters of the utility function.

10. The method of claim 8 further comprising the step of:
using

$$h = f(h_0, m, \varepsilon; \eta)$$

as an estimate of the health transition equation,

where ϵ represents shocks to health in period.

11. (original) The method of claim 8 further comprising the step of:

using

$$\varepsilon \sim F(\varepsilon;\theta) \quad t = 1 \ldots 12$$

for the probability distribution from which the health shocks are drawn, where ϵ is assumed normally distributed and where F(.) is the cumulative density

function of the distribution of shocks, and θ parameterizes that distribution.

12. (original) The method of claim 8 further comprising the steps for: defining a health transition function; and

defining an asset transition function.

13. (original) The method of claim 8 further comprising the steps for:
solving the numerical model by dynamic programming methods.

14 though 18 (Cancelled)

19. (currently amended) A system for calculating optimal flexible savings

account contributions comprising:

at least one computer comprising a central processing unit for processing data and performing numerical solutions, and volatile memory for storing data and commands; and

an algorithm executed by the computer for estimating the optimal flexible spending account contribution which includes

a consumer's objective function;

an instantaneous utility function;

a residual utility function;

a health transition equation;

a transition equation for assets;

a transition equation for total medical expenditure;

exogenous parameters which have assigned values;

preference parameters which have initially assigned test values;

said health transition equation calibrated with historical claims data linked to the user's status;

said algorithm forming a dynamic programming model which is first solved on said computer by numerical calculation ~~methods~~ with assigned exogenous parameters and with test values for the preference parameters in order to obtain estimated preference parameters based on preference parameter test values which correspond to solutions of the dynamic program which are close to observed historical expenditures of like-situated members of a given health plan; and

which is then solved on the computer by numerical calculation ~~methods~~ for optimal flexible account contribution for a particular user with assigned exogenous parameters and with said estimated preference values, the optimal contributions reducing loss of unspent money at the end of a year.

20. (currently amended) A computer readable medium storing a program - for calculating optimal flexible savings account contributions comprising:

a numerical model code segment comprising a consumer's objective function which maximizes expected future utility,

$$\max_{G,\{m_\varepsilon,c_\varepsilon\}_{\varepsilon=-\infty}^{\infty}} EU = \int_{-\infty}^{\infty} U(h,c)f(\varepsilon,\theta)d\varepsilon$$

where,

G represents the FSA contribution;

$\{m_\varepsilon,c_\varepsilon\}_{\varepsilon=-\infty}^{\infty}$ represents the consumption plan for every possible health shock ε;

$U(h,c)$ represents the utility of the consumer from health status h and consumption of non-medical goods c;

f(ε, θ) is the probability density function of the distribution for health shocks, where θ parameterizes the distribution of health shocks and will depend on the characteristics of the consumer,

an instantaneous utility function;

a residual utility function;

a health transition equation;

a transition equation for assets;

a transition equation for total medical expenditure;

values assigned to exogenous parameters; and

test values assigned to preference parameters;

wherein

the health transition equation is calibrated with historical claims data linked to the user's status; and

a solution code segment that solves said numerical model by using numerical calculation ~~methods~~

to determine the optimal flexible spending plan contribution so that forfeiture of unspent money at the end of a year is reduced.

21. (Previously presented) The medium as in claim 20 further comprising:

$$U(h,c)=\begin{cases}\left((1-\delta)h^{\rho}+(\delta)c^{\rho}\right)^{1/\rho} & \text{if } h\geq h_{\min}\\ 0 & \text{if } h<h_{\min}\end{cases}$$

as the instantaneous utility function,

where, ρ < 1, $\delta\in[0,1]$ and $h_{\min}$ are the parameters of the utility function.

22. (Previously presented) The medium of claim 20 further comprising:

$$h=f(h_0,m,\varepsilon;\eta)$$

ht = f(ht-1, mt, ∈t) as an estimate of the health transition equation, where ∈t represents shocks to health in period t.

23. (Previously presented) The medium of claim 20 further comprising:

$$\varepsilon\sim F(\varepsilon;\theta)\quad t=1\ldots12$$

as the probability distribution from which the health shocks are drawn, where ∈ is assumed normally distributed and where F(.) is the cumulative density function of t he distribution of shocks, and θ parameterizes that distribution; and calculating θ by dynamic programming.

24. (Previously presented) The medium of claim 20 in which the numerical model code segment further comprises:
a health transition function; and
an asset transition function.

25. (Currently amended) The medium of claim 20 wherein: the solution code segment uses dynamic programming as the numerical calculation ~~method~~ for solving the numerical model.